

REMARKS

Claims 1-15 and 17-19 are pending in the Application and stand rejected. In view of the foregoing amendments to the claims and the following remarks, Applicant respectfully requests allowance of the application.

Rejection Under §112, first paragraph.

Claim 13 stands rejected under §112, first paragraph. Applicant respectfully traverses this rejection. Claim 13 has been replaced with new limitations which further highlight some of the differences between Applicant's invention and the cited references. Applicant respectfully requests that this rejection be withdrawn.

Rejection Under §112, second paragraph

Claims 13, 14 and 18 stand rejected under §112, second paragraph. Applicant respectfully traverses this rejection. Claims 13 and 14 have been replaced with new limitations which further highlight some of the differences between Applicant's invention and the cited references. Claim 18 has been amended in accordance with the Examiner's helpful suggestion and now recites "wherein the emitter is formed as part of the combustor." Applicant respectfully requests that this rejection be withdrawn.

Rejection Under §102(e)

Claims 1, 13, 14 and 18 stand rejected over Kovacik et al (U.S. Patent Publication 2006/0107995). Applicant respectfully traverses this rejection. Claim 1 has been amended to recite that the photovoltaic cell begins at the transition step and extends along the first section. This element is clearly not taught or suggested in Kovacik et al. Fig. 3 of Kovacik et al shows fuel entering at the top of the drawing, being ignited at burner 24, and then exhaust products pass through a constricting end and enter an internal SiC tube 26 within upper housing 22. It is not clear whether there is any significant expansion of the exhaust products when transitioning from

the area above 26 to 26. Applicant believes that there is no expansion, and that expansion actually occurs in lower housing 22 when exhaust products exit 26. In either case, the photovoltaic cell of Kovacik et al does not begin at the transition step. Applicant has amended Claim 1 to make it clear that the photovoltaic cell begins at the transition step and extends along the previously defined first section. Applicant respectfully requests that this rejection be withdrawn.

Claims 13, 14 and 18 depend from claim 1 and are therefore allowable for at least the same reasons as claim 1. To further highlight structural differences between Applicant's invention and the cited references, Applicant has amended dependent claim 13 to recite that the light filter begins at the transition step and extends along the first section and that the filter is configured to pass photons above a threshold and reflect photons under the threshold. None of the filters of Kovacik et al have this combination of features. For example, filter 16 of Kovacik et al extends past any transition step (be it the areas embedded in upper housing 22 of Fig. 3, or lower housing 22 of Fig. 3) so it cannot qualify as Applicant's filter. Further, filter 36 of Kovacik et al cannot serve as Applicant's filter as filter 36 is a midrange filter. Filter 36 extends along the length of the PV cell, but filter 36 blocks light waves in a range of frequencies, apparently with the goal of reflecting back some frequencies to the emitter. That is, if the frequency of light is above a second threshold higher than the first threshold, the light will pass through the filter. If the frequency of light is below a second threshold higher than the first threshold, the light will pass through the filter. Light in other frequencies either below the first threshold or above the second threshold will be reflected back. By contrast, Applicant's filter only blocks frequencies below a single threshold (and allows light with frequencies above that single threshold to pass). Applicant therefore respectfully requests that this rejection be withdrawn.

Claim 14 depends from Claim 13 and now recites that the first section of the combustor has an end opposite the transition step, and both the photovoltaic cell and the filter end at the end of the first section. This combination of elements is clearly not taught or suggested in Kovacik et al. The end of the combustion chamber of Kovacik et al is not co-

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terminal with the photovoltaic cell or the filter. Applicant respectfully requests that this rejection be withdrawn.

Rejection Under §103(a)

Claims 2-5, 7-12 and 17 stand rejected over Kovacik et al in view of Gardner et al (U.S. Patent 6,786,716). Applicant respectfully traverses this rejection. Claims 2-5, 7-12 and 17 depend from claim 1 which is allowable over Kovacik et al for the reasons stated above. Nothing in Gardner teaches or suggests a thermophotovoltaic device a photovoltaic cell which begins at the transition step and extends along the first section. Applicant therefore respectfully requests that this rejection be withdrawn.

Rejection Under §103(a)

Claim 6 stands rejected over Kovacik et al in view of Gardner et al (U.S. Patent 6,786,716), and further in view of either Applicant's admitted prior art or Ferguson et al (Materials Science and Engineering B83 (2001) 35-41). Applicant respectfully traverses this rejection. Claim 6 depends from claim 1 which is allowable over Kovacik et al and Gardner et al for the reasons stated above. Nothing in either Applicant's admitted prior art or Ferguson et al teaches or suggests a thermophotovoltaic device a photovoltaic cell which begins at the transition step and extends along the first section. Applicant therefore respectfully requests that this rejection be withdrawn.

Rejection Under §103(a)

Claims 15 stands rejected over Kovacik et al in view of Gardner et al (U.S. Patent 6,786,716) and further in view of DuPoy (U.S. Patent 6,043, 426). Applicant respectfully traverses this rejection. Claim 15 depends from claim 1 which is allowable over Kovacik et al and Gardner et al for the reasons stated above. Nothing in DuPoy teaches or suggests a thermophotovoltaic device a photovoltaic cell which begins at the transition step and extends along the first section. Applicant therefore respectfully requests that this rejection be withdrawn.

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Rejection Under §103(a)

Claim 19 stands rejected over Kovacik et al in view of Gardner et al (U.S. Patent 6,786,716), and further in view of Fraas et al (U.S. Patent 6,489,553). Applicant respectfully traverses this rejection. Claim 19 depends from claim 1 which is allowable over Kovacik et al and Gardner et al for the reasons stated above. Nothing in Fraas et al teaches or suggests a thermophotovoltaic device a photovoltaic cell which begins at the transition step and extends along the first section. Applicant therefore respectfully requests that this rejection be withdrawn and the claims be allowed.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

/mart c matthews/  
Mart C. Matthews  
Reg. No. 26,201

TOWNSEND and TOWNSEND and CREW LLP  
Two Embarcadero Center, Eighth Floor  
San Francisco, California 94111-3834  
Tel: 303-571-4000  
Fax: 415-576-0300  
MYM/cl

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